

WHAT IS CLAIMED IS:

1. A system for stabilizing at least two antennas on a mobile platform, the antennas including a first antenna associated with a first geo-stationary satellite and a second antenna associated with a second geo-stationary satellite, the system comprising:

- (a) an upper alignment system configured for being a common support for the antennas, said upper alignment system having at least one degree of freedom, said upper alignment system including an intermediate element, said upper alignment system being configured for pointing the antennas relative to said intermediate element, such that the angular displacement between the first antenna and the second antenna is substantially matched with the angular displacement between the first geo-stationary satellite and the second geo-stationary satellite; and
- (b) a lower alignment system mechanically connected to said upper alignment system and the mobile platform, said lower alignment system having three degrees of freedom, said lower alignment system being configured for maintaining the orientation of said intermediate element in order to compensate for rotation of the mobile platform, such that the first antenna and the second antenna

are maintained pointing toward the first geo-stationary satellite and the second geo-stationary satellite, respectively.

2. The system of claim 1, wherein said three degrees of freedom are rotational degrees of freedom, said three degrees of freedom including roll, pitch and yaw, said lower alignment system being configured for maintaining the orientation of said intermediate element in order to compensate for movements of yaw, pitch and roll of the mobile platform.

3. The system of claim 1, wherein said upper alignment system and said lower alignment system are configured, such that said lower alignment system maintains the orientation of said intermediate element in order that movement of the first antenna and the second antenna is substantially restricted to pointing to satellite of the Clark belt.

4. The system of claim 1, wherein said upper alignment system is configured, such that the polarization of the first antenna is adjustable.

5. The system of claim 4, wherein said upper alignment system is configured, such that the polarization of the second antenna is adjustable.

6. The system of claim 1, wherein said one degree of freedom of said upper alignment system is a rotational degree of freedom configured for setting the cross-elevation of the first antenna and the second antenna.

7. The system of claim 1, wherein said upper alignment system, said lower alignment system, the first antenna and the second antenna fit under a single radome.

8. The system of claim 1, wherein said upper alignment system and said lower alignment system are configured to provide full hemispherical coverage for the first antenna and the second antenna.

9. A method for stabilizing at least two antennas on a mobile platform, the antennas including a first antenna associated with a first geostationary satellite and a second antenna associated with a second geostationary satellite, the method comprising the steps of:

- (a) mechanically connecting the antennas to an element;
- (b) pointing the antennas relative to each other such that the angular displacement between the first antenna and the second antenna is matched with the angular displacement between the first geostationary satellite and the geostationary second satellite; and
- (c) maintaining the orientation of said element in order to compensate for rotation of the mobile platform, such that the first antenna and the second antenna are maintained pointing toward the first geostationary satellite and the second geostationary satellite, respectively.

10. The method of claim 9, wherein said step of maintaining includes at least one of a roll adjustment, a pitch adjustment and a yaw adjustment in order to compensate for movements of roll, pitch and yaw of the mobile platform, respectively.

11. The method of claim 9, wherein said step of maintaining is performed, such that movement of the first antenna and the second antenna is restricted to pointing to satellite of the Clark belt.

12. The method of claim 9, further comprising the step of adjusting the polarization of the first antenna.

13. The system of claim 12, further comprising the step of adjusting the polarization of the second antenna.

14. The system of claim 9, further comprising the step of disposing the antennas in a single radome.